Greater Suttle Lake Vegetation Management Project

Botany Report for TES Plants, Survey and Manage Plants, and Invasive Plants

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Summary of Findings

Under the proposed action:

There are no Threatened or Endangered botanical species on the Deschutes National Forest, therefore the project will have no effect.

The proposed action may impact Sensitive botanical species individuals or habitat, but is not likely to contribute to a trend towards federal listing or loss of viability to the population. It should be noted that while project implementation may adversely impact individuals of several sensitive species, these same impacts are projected to occur even without the project. *Project design criteria are required.*

The proposed action will have no impact on Survey and Manage botanical species. *Project design criteria are required.*

There is a **HIGH risk of introducing/spreading invasive plants** within this project area. *Project design criteria and mitigation measures are required.*

- South Shore Campground has an especially bad knapweed (*Centaurea* sp.) and St. Johnswort (*Hypericum perforatum*) infestation. Heavy machinery should not be used within unit 2, near campsites 4, 5, 9, 10 18, or 19 without input from the district botanist.
- Standard weed clause (Appendix A) needs to be included in all contracts.
- Pre- and post- project implementation weed treatments are required.

Project location

See Decision Memo.

Project description

See Decision Memo.

Regulatory Framework / Management Direction

Threatened, Endangered, and Sensitive (TES) Plant Species

This report is prepared in compliance with the Forest Service Manual (FSM) 2672.4, the Endangered Species Act of 1973 (Subpart B; 402.12, section 7 consultation) and the Northwest Forest Plan. Effects of this activity are evaluated for those TES plant species on the current Regional Forester's Sensitive Species List. There are no Endangered or Threatened Plant species on the Deschutes National Forest.

Survey and Manage

Northwest Forest Plan (1994)

The Northwest Forest Plan is a series of federal policies and guidelines governing land use on federal lands in the Pacific Northwest region of the United States. The Plan was developed with the intent of protecting habitat for the northern spotted owl, but came to include much broader habitat protection goals. It creates a network of Riparian Reserves and Late Successional Reserves to conserve and protect habitat and amends the Deschutes National Forest Land and Resource Management Plan (USDA 1990).

Requirements for surveys and management of vascular plants, bryophytes, lichens and fungi apply. The project is consistent with the January 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measures Standards and Guidelines, as modified by the 2011 Settlement Agreement. In addition, there are three species receiving special consideration as directed in the May 13, 2014 Regional Forester letter.

Invasive Plant Species

Forest Service Manual (FSM) direction requires that an Invasive Plant (formerly called noxious weed) Risk Assessment be prepared for all projects involving ground-disturbing activities. For projects that have a moderate to high risk of introducing or spreading invasive plants, Forest Service policy requires that decision documents must identify invasive plant control measures that will be undertaken during project implementation (FSM 2081.03, 29 November 1995). Invasive plants are identified from the Region 6 Invasive Plant List (Appendix C).

In 2006, the Deschutes and Ochoco National Forest developed Invasive Plant Prevention Practices using the Guide to Noxious Weed Prevention Practices (July 12, 2001). These practices were preceded by Forest Plan direction that was established with the Pacific Northwest Region Preventing and Managing Invasive Plants Record of Decision (October 2005). When the R-6 Invasive Plant Species FEIS ROD came out in October 2005, it amended R-6 Forest Plans and contained 23 Standards related to prevention and treatment of invasive plants. Additional direction for the management of invasive plants is contained in Forest Service Manual, Section 2080. Prevention practices were also included in the Deschutes and Ochoco National Forest and Crooked River National Grassland Invasive Plant Treatments Environmental Impact Statement (USFS 2012). The invasive plant prevention practices are provided for use on the Deschutes and Ochoco National Forests and Crooked River National Grassland to minimize the introduction of invasive plants; minimize conditions that favor the establishment or spread of invasive plants; and to facilitate the integration of invasive plant management practices into resource programs.

Pre-field Review

A pre-field review (available in project record) was conducted using GIS to find known weed, Survey and Manage (S&M), sensitive, and threatened and endangered species sites and to determine possible habitat needing surveys.

There are no threatened or endangered plant species on the Deschutes National Forest. For sensitive botanical species, there are two known populations in the proposed project area. There is potential habitat for several species additional, as listed in Table 1 below.

Taxon Name	District	Elev. (ft.)	Slope	Soils	Plant Association	Habitat
Agoseris elata tall agoseris AGEL Asteraceae; perennial	SIS	3000-4800	0-45%	Sandy loam	PIPO/PUTR/FEID, CPS-211, PICO, PIEN or mixed conifer	Forest openings and forest edges adjacent to wet/moist meadows, lakes, rivers, streams.
Calamagrostis breweri shorthair reedgrass CABR Poaceae: perennial	CRE	4600-6000	0%-gentle		On CRE along lake margin and associated wet meadows with *Lycopodiella inundata, Kalmia microphylla, Dodecatheon jeffreyi, Botrychium simplex* at 5640 '.	Alpine to subalpine meadows, open slopes, streambanks, and lake margins. ECOR = WC.
Gentiana newberryi var. newberryi alpine gentian GENEN Gentianaceae; perennial	BFR, SIS	4700-8700	0-25%	Sandy loam	Alpine-subalpine mixed conifer. *Deschampsia cespitosa* meadows.	Mixed conifer openings. Montane wet to dry meadows, sometimes adjacent to springs, streams, or lakes.
Helvella crassitunicata HECR13 Elfin saddle Helvellaceae (Ascomycete)	SIS	1900-9200			Documented in the following vegetation zones: Tsuga mertensiana, parkland, Abies amabilis, A. lasiocarpa, and Lithocarpus densiflorus; other associates include Pseudotsuga menziesii, Calocedrus decurrens, Tsuga heterophylla, T. mertensiana. *Acer, Alnus, Sorbus* and *Taxus.*	On soil and along trails in montane regions. Cascades, central OR to northern WA and Olympic NP. Season: August through October.
Penstemon peckii Peck's beardtongue PEPE10 Scrophulariaceae; perennial	SIS	2600-4000 (4900)		Sandy loam, loamy sand, pumiceous loamy sand		Ponderosa pine openings, open PP forests; mixed conifer openings; recovering fluvial surfaces, seeps, rills, draws, ditches, moist-wet meadows, dry or intermitttant stream channels.
Lobelia dortmanna Dortmann's cardinalflower LODO Campanulaceae; perennial	SIS	2700-3500	0%		Shallow water at margins of lakes, ponds, and rivers or in standing water of bogs and wet meadows.	In water of lake, pond, slow river or stream, or wet meadow. DES site at Dark Lake is only Oregon locality.
Diphasiastrum complanatum *(formerly Lycopodium complanatum)*groundcedar LYCO3 Lycopodiaceae; perennial		3400-5400	0%-gentle	Fine to coarse; duff thin or thick	Conifer forests.	Edges of wet meadows; dry, forested midslope with 25% canopy cover. ECOR = WC, BM.
Pseudorhizina californica (Gyromitra californica) false morel PSCA17 Discinaceae (Basidiomycete)		668-6515			Found in Pacific Silver Fir (35%), White Fir-Grand Fir (27%), Mountain Hemlock (23%), Western Hemlock (5%), Ponderosa Pine (3%), Rock (3%), Subalpine Fir-Engelmann Spruce (3%), Douglas Fir (1%), Grasslands-Meadows (1%) vegetation zones.	Occurs on or adjacent to well-rotted stumps or logs of coniferous trees, on litter, or soil rich in brown rotted wood; also found on soil along streams, skid trails and recently disturbed soil.

Taxon Name	District	Elev. (ft.)	Slope	Soils	Plant Association	Habitat
Rhizopogon alexsmithii (Alpova alexsmithii) RHAL13 Boletaceae (Basidiomycete)	BFR, SIS	2700-5800			With various Pinaceae spp., including *Abies amabilis*, *Pinus contorta*, *Picea engelmannii* and *Tsuga mertensiana*.	Sequestrate; mycorrhizal; Cascades, central OR to central WA.

Table 1. Sensitive species with potential habitat in or adjacent to the proposed project area.

The entire project area is within lands managed under the Northwest Forest Plan; Survey and Manage management direction applies. Mapped patches of old growth based on Lidar determinations of large trees per acre were identified for field verification. Field verification determined that there is one patch of late successional old growth (LSOG) habitat. Falling and removal of hazard and danger trees is permitted within this area as per the 2001 record of decision since routine maintenance of road sites is considered non-habitat disturbing. There is potential habitat for mountain lady's slipper orchid (*Cypripedium montanum*), including in areas outside of the LSOG.

Known weed sites were reviewed as well. The project area has historically had diffuse knapweed (*Centaurea diffusa*), spotted knapweed (*Centaurea stoebe* ssp. *micranthos*), bull thistle (*Cirsium vulgare),* St. Johnswort (*Hypericum perforatum*), Dalmatian toadflax (Linaria dalmatica), butter and eggs (Linaria vulgaris), and tansy ragwort (*Senecio jacobaea*). Rush skeletonweed (Chondrilla juncea) and Eurasian watermilfoil (*Myriophyllum spicatum*), and medusahead rye (*Taeniatherum caput-medusae*) have been found adjacent to the project area.

Survey results

Initial surveys were conducted February 11 by the District and Forest Botanist to determine potential habitat. One patch of late successional old-growth Survey and Manage habitat (LSOG) and additional areas of potential mountain lady's slipper habitat were found. The LSOG patch would require two years of additional surveys if any habitat disturbing activities were to occur within it, however routine road maintenance including the felling and removal of danger trees is not considered habitat disturbing. No other trees will be felled or removed from this area. Surveys for TES species and mountain lady slipper were conducted throughout the project area in multiple days in June 2019, and one new Peck's penstemon site was found. PDCs require avoiding this site or working with botanist to prevent impact. Additional surveys are not required.

Effects Analysis

TES:

If the project is not implemented, current management plans would continue to guide management in the project area. Hazard and danger trees would be felled and could be removed and/or used for firewood. Due to the high number of recreational sites including campgrounds and developed camps, there is likely to be a high number of trees felled. This approach would have many of the same impacts as the project, however, would be done in a piecemeal fashion without a comprehensive restoration plan. Trees that do not currently rate as

hazard or danger trees would be left in the short-term, however, these trees are projected to become hazard or danger trees and require removal in the future.

Proposed Action

Direct, Indirect, and Cumulative Effects: There are two known TES sites within the project area. There is also a limited amount of potential habitat for multiple species as listed in Table 1. Potential effects are:

Species	Summary of potential effects from proposed action on species or habitat	Discussion of effects
Agoseris elata	No impact.	Species was surveyed for in likely habitat, but not found.
Calamagrostis breweri	No impact.	Species was surveyed for in likely habitat, but not found.
Gentiana newberryi var. newberryi	No impact.	Species was surveyed for in likely habitat, but not found.
Helvella crassitunicata	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing	Due to the difficulty in detecting this species, it is possible that project disturbance could reduce habitat and disturb individuals, but due to the scale of the project and very low probability of its presence, this is unlikely. Additional surveys are not required.
Lobelia dortmanna	No impact.	This species grows in water, and there is one known population within the project area. See Project Design Criteria.
Penstemon peckii	No impact.	Site will be avoided. See Project Design Criteria.
Diphasiastrum complanatum (formerly Lycopodium complanatum)	No impact.	Species was surveyed for in likely habitat, but not found.
Pseudorhizina californica (Gyromitra californica)	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing	Due to the difficulty in detecting this species, it is possible that project disturbance could reduce habitat and disturb individuals, but due to the scale of the project and very low probability of its presence, this is unlikely. Additional surveys are not required.
Rhizopogon alexsmithii (Alpova alexsmithii)	May adversely impact individuals, but not likely to result in a loss of viability in the Planning Area, nor cause a trend toward federal listing	Due to the difficulty in detecting this species, it is possible that project disturbance could reduce habitat and disturb individuals, but due to the scale of the project and very low probability of its presence, this is unlikely. Additional surveys are not required.

Table 2. Potential effects on sensitive species with potential habitat in or adjacent to the proposed project area.

TES Summary

It should be noted that while project implementation may adversely impact individuals of several sensitive species, these same impacts are projected to occur even without the project. Hazard and danger trees would be felled and possibly removed, however, no comprehensive restoration plan would be enacted. Additional surveys are not required.

Survey and Manage

During the pre-field review (available in project file) it was determined that the entire project falls within the Northwest Forest Plan Area. There is potential habitat within the project area for mountain lady's slipper orchid (*Cypripedium montanum*) and surveys were conducted. The pre-field review also determined that there could be LSOG habitat. Mapped potential patches were visited and evaluated. One patch of LSOG was identified. Surveys are not required because the only treatments within LSOG is within the roadside danger tree area.

Proposed Action

Direct, Indirect, and Cumulative Effects:
During surveys it was determined that there is limited, low quality habitat for Survey and Manage species. There is one patch of LSOG and treatment within this patch is limited to routine road maintenance which includes falling and removing hazard trees. This is not considered a habitat-disturbing activity under the 2001 ROD, and therefore will have no impact. Additional areas outside of LSOG have a low probability of containing survey and manage species, so there will be no impact to survey and manage species. No additional surveys are required.

Invasive species:

The project may introduce or spread invasive plants by creating disturbance, introducing seed, and spreading seed. The project area (Suttle Lake and surrounding area) has historically had spotted knapweed, diffuse knapweed, St. Johnswort, medusahead rye, and tansy ragwort. Non-native invasive plants have the ability to disrupt local ecological function changing species diversity and structure. They can reproduce very quickly and outcompete native species when conditions are right. Many things contribute to invasive plant species infestations, but they require introduction and appropriate growing conditions. Invasive species, once established, are often difficult to remove, outcompete native plants, change hydrological function, and fail to provide suitable habitat for native wildlife.

Ecological Trends

Without the project, danger and hazard trees would continue to be felled. Ongoing weed treatments would continue, as would the regular introduction of additional invasive species seeds from roads, recreational use, and routine maintenance activities.

Proposed Action

Direct, Indirect, and Cumulative Effects:
An invasive species risk analysis was conducted for the project (see below). With the proposed action there is a ***high likelihood*** of spread and increase of invasive species due to added disturbance. Mitigations are required to reduce this, but there remains a high likelihood of invasive plant populations increasing and spreading. An especially high risk area is within South Shore Campground (treatment area 2). Campsites 4, 5, 9, 10, 18 and 19 are especially infested, and use of heavy machinery in or near these sites have a very high potential of spreading weed seeds. This project is adjacent to the highway 20 road corridor which has the highest weed diversity of the district, and active management increases the chance of spread. It will be imperative to continue to treat invasive species in the project area following the project.

Discussion of Ranking

The project area was given a high risk ranking due to known weed sites, the use of heavy equipment, importation of materials, and high recreational use.

Invasive Plant Weed Risk Assessment

Risk Ranking

Factors considered in determining the level of risk for the introduction or spread of invasive plants are:

_X_HIGH

Has to be a combination of the following three factors:

Known weeds in/adjacent to project area. **YES**
Any of vectors # 1-8 in project area. **YES**
Project operation in/adjacent to weed population. **YES**

___MODERATE

Any of vectors # 1-5 present in project area.

___LOW

Any of vectors # 6-8 in project area.
Known weeds in/adjacent to project area without vector presence.

Vectors ranked in order of weed introduction risk:

Heavy equipment (implied ground disturbance) YES
Importing soil/cinders/gravel NO
OHV's POSSIBLE
Grazing (long-term disturbance) NO

Pack animals (short-term disturbance) NO
Plant restoration LIKELY
Recreationists (hikers, mountain bikers, horses) YES
Forest Service project vehicles YES

Project Design Criteria and Mitigation Measures

To protect TES species:

- Work with botanist to protect sensitive plant populations within and adjacent to the project area.
    - There are two known sensitive species sites within the project area. Work with botanist to protect these sites.
    - If any other TES sites are found during implementation, mitigations will depend on the site and species found. Work with district botanist to determine appropriate mitigations.

To protect Survey and Manage Habitat:

- There is one small portion (approximately 1 acre) of Late Successional Old Growth (LSOG) within the project area. Danger trees can be cut and removed from this roadside patch as part of routine road maintenance, but no other trees should be cut. Work with botanist to keep disturbance to a minimum.

In order to reduce invasive plant spread:

- Existing weed sites have been identified by the botanist, and sites with a high risk of spread should be disturbed as little as possible.
    - South Shore Campground has an especially bad knapweed (*Centaurea* sp.) and St. Johnswort (*Hypericum perforatum*) infestation. Heavy machinery should not be used near campsites 4, 5, 9, 10, 18, or 19 without input from the district botanist.
    - See map for areas that botanist should be consulted on prior to disturbance (see map 1).
- Require clean vehicles and equipment to reduce introduction of invasive plant seed. Wash tires and undercarriages to remove mud, dirt and seeds before bringing on the National Forest and again after leaving. Use Clean Equipment clause in contract. (Appendix A)
- Work to increase public (including contractors) awareness of invasive plants and their potential negative impact on the environment. Include educational emphasis in pre-work and other contract meetings.
- Reseeding or replanting of disturbed areas is encouraged in order to reduce the spread of invasive species. The need for reseeding/replanting should be evaluated by the

district botanist following project implementation. Use only local species approved by the district botanist for this specific site location.

- Weed sites within the project area need to be treated by hand or under a Forest Service herbicide use prescription before and after disturbance. Long-term weed treatments will likely be needed.

4) Camp Tamarack Buried Electrical Powerline

- Rehabilitate the trench line by covering it with debris to prevent concentration of overland flow or becoming a trail if not located in a roadway, ditch line, or high use area.
- Avoid trenching, if possible, where it would require the cutting of lake shore trees or major roots of lake shore trees.
- Seed areas disturbed by the powerline with native seed mix in not in a roadway or high use area.
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Submitted by:

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References

Interagency Special Status/Sensitive Species Program (ISSSSP) webpage at http://www.fs.fed.us/r6/sfpnw/issssp/

USDI Bureau of Land Management (BLM). 2018. Survey and Manage website. https://www.blm.gov/or/plans/surveyandmanage/

USFS. 1990. Final Environmental Impact Statement, Deschutes National Forest Land and Resource Management Plan. Deschutes National Forest, Supervisors Office, Bend, OR.

USFS. 2005. Preventing and Managing Invasive Plants. Final Environmental Impact Statement. Pacific Northwest Region.

USFS. 2018. Regional Foresters Sensitive Species List, Region 6 ISSSSP website, http://www.fs.fed.us/r6/sfpnw/issssp/agency-policy/

USFS. 2009. Conservation Strategy for Peck's penstemon. Deschutes National Forest. Sisters Ranger District, Sisters, OR.

USDA Forest Service and USDI Bureau of Land Management. 1994. Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the range of the Northern Spotted owl. Portland, Oregon.

USDA Forest Service and USDI Bureau of Land Management. 2001. Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and

other Mitigation Measures Standards and Guidelines. USDA Forest Service and Bureau of Land Management. Portland, OR.

Appendix A

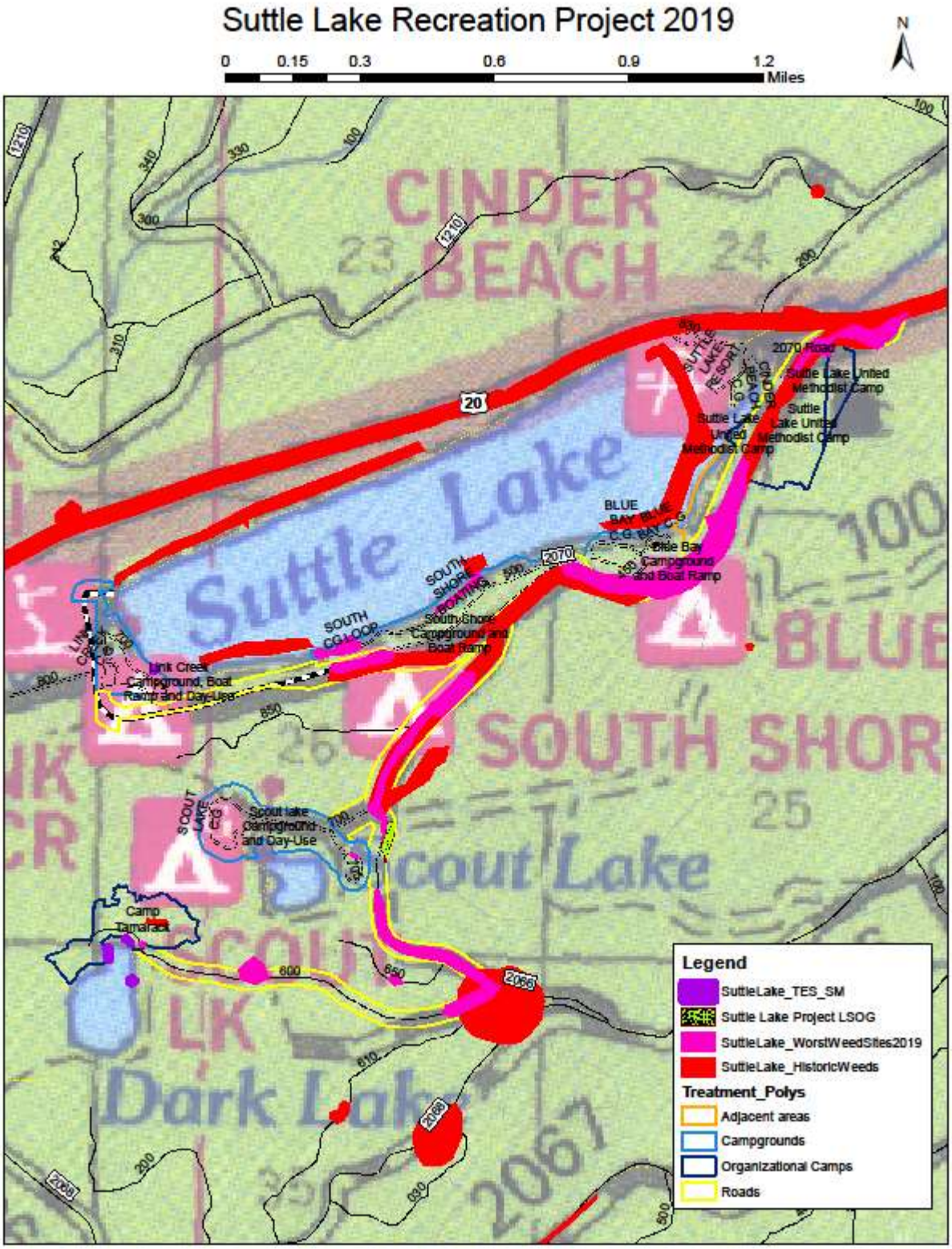
Equipment Cleaning Clause

C6.343 (OPTION 2) - CLEANING OF EQUIPMENT. (7/96). To prevent the introduction of the seeds of noxious weeds onto National Forest land, Purchaser shall ensure all equipment moved onto National Forest land is free of soil, seeds, vegetative matter, or other debris that could contain or hold seeds. Purchaser shall employ whatever cleaning methods necessary to ensure compliance with the terms of this provision, and shall notify Forest Service prior to moving each piece of equipment onto National Forest land. Notification will include identifying the location of the equipment's most recent operations. Upon request of Forest Service, arrangements will be made for Forest Service to inspect each piece of equipment prior to it being placed into service.

Purchaser shall certify in writing, compliance with the terms of this provision prior to each start-up of sale operations. Measures taken to ensure compliance for equipment present at start-up, and planned to be taken for equipment moved in later, will be identified in the certification. For the purposes of this provision, "equipment" includes all logging machinery, except for log trucks, chip vans, pickup trucks, cars, or other vehicles used to daily transport personnel.

INSTRUCTIONS: This provision may be used when the EA and Decision Document address the issue of noxious weed control. Forest Service and other vehicles will be given the same scrutiny and will be properly cleaned prior to entry into areas that are subject to this provision.

Appendix B. Maps



Map 1. Invasive species, TES, S&M and sites and LSOG location